

# RESPONSE OF VEGETATION IMPORTANT TO NORTHERN BOBWHITES FOLLOWING CHEMICAL AND MECHANICAL TREATMENTS

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## ABSTRACT

Populations of northern bobwhite (*Colinus virginianus*) have declined since the early 1900s due to large-scale land use changes and habitat destruction. In southern pine stands land managers have used a variety of treatments to control hardwood encroachment, a major contributing factor to the loss of optimal quail habitat. We compared the use of the herbicide Arsenal® (imazapyr) and traditional mechanical treatments with and without fire to control hardwood stem encroachment on 2 study areas. On Tall Timbers Research Station, hardwood stem density decreased on herbicide and herbicide + burn plots, but increased on all mechanically treated plots between years. Herbicide and herbicide + burn plots resulted in a >3-fold increase in forb coverage between years, whereas mechanically treated plots did not increase forb coverage. On Foshalee Plantation, hardwood stem density decreased and forb coverage increased between years on chemically treated plots. A one-time application of Arsenal can control hardwood encroachment in pine forests and stimulate herbaceous species growth. Following treatment, vegetative communities likely can be maintained for prolonged periods by using traditional, less expensive, methods of management such as prescribed fire.

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